



UM10754

OM13491, OM13492, OM13493, OM13494, OM13495, OM13496,
OM13497 Breakout Board

Rev. 2 — 4 October 2018

User manual

Document information

Information	Content
Keywords	Fm+, I2C-bus, Surface Mount Package, Breakout Board, DIP Adapter, surface mount package
Abstract	Technical information for breakout boards allowing I2C-bus surface mount components to be easily evaluated



Revision history

Rev	Date	Description
v.2	20181004	Added Figure 7 and Figure 8 ; updated Panel G information; removed EOL parts PCA9701HF, PCA9703HF, PCU9955TW; added PCAL6416AEX1 and PCAL6416AER; updated Table 1
v.1	20131023	Initial version

1 Introduction

The Breakout Boards OM13491, OM13492, OM13493, OM13494, OM13495, OM13496, and OM13497 allow surface mounted I²C-bus components to be easily evaluated by translating surface mount packages to a leaded package format with 100mil pin pitch.

2 Key features

A wide variety of package types:

Almost all the surface mount package types used by NXP I²C-bus products are supported.

Table 1. Package Name to SOT drawing number conversion

OM #	Panel #	Package Name	SOT Number	Dimension (mm) L x W x Seating H	Pitch (mm)
13491	A-1	SO8	SOT96-1	4.9 x 3.9 x 1.75	1.27
13491	A-2	VSSOP8	SOT765-1	2 x 2.3 x 1	0.5
13491	A-3	XQFN8U	SOT902-1 (Replaced by SOT902-2)	1.6 x 1.6 x 0.5	0.55
13491	A-3	XQFN8	SOT902-2	1.6 x 1.6 x 0.5	0.55
13491	A-3	XQFN8	SOT902-3	1.6 x 1.6 x 0.5	0.6
13491	A-4,5	HWSON8	SOT1069-2	2 x 3 x 0.75	0.5
13491	A-6,7	MSOP8 (TSSOP8)	SOT505-1 (Replaced by SOT505-2)	3 x 3 x 1.1	0.65
13491	A-6,7	MSOP8 (TSSOP8)	SOT505-2	3 x 3 x 1.1	0.65
13491	A-6,7	TSSOP8	SOT505-1 (Replaced by SOT505-2)	3 x 3 x 1.1	0.65
13491	A-6,7	TSSOP8	SOT505-2	3 x 3 x 1.1	0.65
13492	B-1	MSOP10 (TSSOP10)	SOT552-1	3 x 3 x 1.1	0.5
13492	B-2	HVSON10	SOT650-1	3 x 3 x 0.85	0.5
13492	B-3	XSON8(U)	SOT996-2	3 x 2 x 0.5	0.5
13492	B-4	TSSOP8	SOT530-1	3 x 4.4 x 1.1	0.65
13492	B-5	HVSON8	SOT908-1	3 x 3 x 0.85	0.5
13492	B-5	HVSON8	SOT908-3	3 x 3 x 0.85	0.5
13492	B-6	WLCSP6	PCT2202	0.69 x 1.09 x 0.38	0.4
13492	B-7	TSOP6	SOT457	2.9 x 1.5 x 1	0.95
13492	B-7	TSOP6	SOT1353-1 (newer, add A2, A3, L dimension)	2.9 x 1.5 x 1	0.95
13493	C-1 (wrong silk screen SOT616-1)	DHVQFN24	SOT815-1	3.5 x 5.5 x 0.85	0.5
13493	C-2 (wrong silk screen SOT662-1)	DHVQFN20	SOT764-1	2.5 x 5.5 x 0.85	0.5
13493	C-3	DHVQFN16	SOT763-1	3.5 x 2.5 x 0.85	0.5
13493	C-4	DHVQFN14	SOT762-1	2.5 x 3 x 0.85	0.5
13494	D-1	HVQFN24	SOT616-1	4 x 4 x 0.85	0.5

OM13491, OM13492, OM13493, OM13494, OM13495, OM13496, OM13497 Breakout Board

OM #	Panel #	Package Name	SOT Number	Dimension (mm) L x W x Seating H	Pitch (mm)
13494	D-1	HWQFN24	SOT994-1	4 x 4 x 0.75	0.5
13494	D-2	HVQFN20	SOT662-1	5 x 5 x 0.85	0.65
13494	D-3	HVQFN16	SOT758-1	3 x 3 x 0.85	0.5
13494	D-4	HVQFN16	SOT629-1	4 x 4 x 0.85	0.65
13495	E-1	TSSOP24	SOT355-1	7.8 x 4.4 x 1.1	0.65
13495	E-2	TSSOP20	SOT360-1	6.5 x 4.4 x 1.1	0.65
13495	E-2	TSSOP20	SOT360-2	6.5 x 4.4 x 1.05	0.65
13495	E-3	TSSOP16	SOT403-1	5 x 4.4 x 1.1	0.65
13495	E-4	TSSOP14	SOT402-1	5 x 4.4 x 1.1	0.65
13496	F-1	TSSOP28	SOT361-1	9.7 x 4.4 x 1.1	0.65
13496	F-1	TSSOP28	SOT361-2	9.7 x 4.4 x 1.2	0.65
13496	F-2	XQFN16	SOT1161-1	1.8 x 2.6 x 0.5	0.4
13496	F-3	QSOP16 (SSOP16)	SOT519-1	4.9 x 3.9 x 1.73	0.635
13496	F-4	XFBGA16	SOT1354-1	1.6 x 1.6 x 0.5	0.4
13497	G-1	HTSSOP28	SOT1172-1 (Replace by SOT1172-2)	9.7 x 4.4 x 1.1	0.65
13497	G-1	HTSSOP28	SOT1172-2 (add reflow soldering footprint)	9.7 x 4.4 x 1.1	0.65
13497	G-1	HTSSOP28	SOT1172-3 (Dh dimension is smaller than SOT1172-2)	9.7 x 4.4 x 1.1	0.65
13497	G-2	VFBGA24	SOT1199-1	3 x 3 x 0.85	0.5
13497	G-3 (wrong silk screen SOT1372-1)	XFBGA24	SOT1342-1	2 x 2 x 0.5	0.4
#N/A		HVSON8	SOT908-4	2 x 2 x 0.85	0.5
#N/A		HXSON12	SOT973-2	2.5 x 1.35 x 0.5	0.4
#N/A		X2SON8	SOT1372-1	3 x 2 x 0.35	0.5
#N/A		SSOP16	SOT338-1	6.2 x 5.3 x 2	0.65
#N/A		SSOP20	SOT266-1	6.5 x 4.4 x 1.5	0.65
#N/A		SSOP24	SOT340-1	8.2 x 5.3 x 2	0.65
#N/A		SO8	SOT176-1	7.55 x 7.5 x 2.65	1.27
#N/A		SO16	SOT162-1	10.2 x 7.5 x 2.65	1.27
#N/A		SO20	SOT163-1	12.8 x 7.5 x 2.65	1.27
#N/A		SO24	SOT137-1	15.3 x 7.5 x 2.65	1.27
#N/A		X2QFN24	SOT1895-1	2 x 2 x 0.35	0.4

OM #	Panel #	Package Name	SOT Number	Dimension (mm) L x W x Seating H	Pitch (mm)
#N/A		HVQFN20	SOT917-1 (Replace by SOT917-4)	4 x 4 x 0.85	0.5

Translation to leaded pins:

The breakout boards translate the surface mount package to a leaded package with 100 mil pitch, allowing quick and easy bread boarding in standard configurations.

3 Quick overview of the breakout board concept

There are seven different breakout boards, each supporting a number of different surface mount packages. If one wishes to evaluate a device, simply solder a surface mount device to the appropriate site and break out the site from the panel by cutting through the small tabs holding each board in place. If one is using a universal breadboard for evaluation, solder header pins to the outside pads, allowing one to insert the device into the breadboard.

For a more permanent connection, one can simply solder hookup wire to the outside pads.

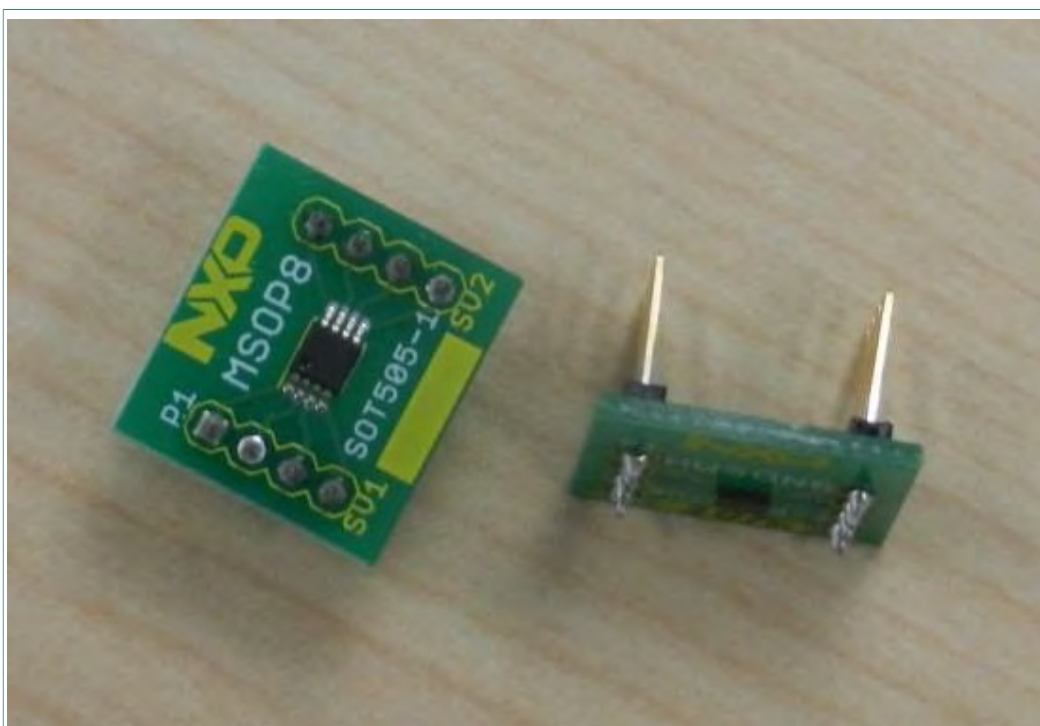
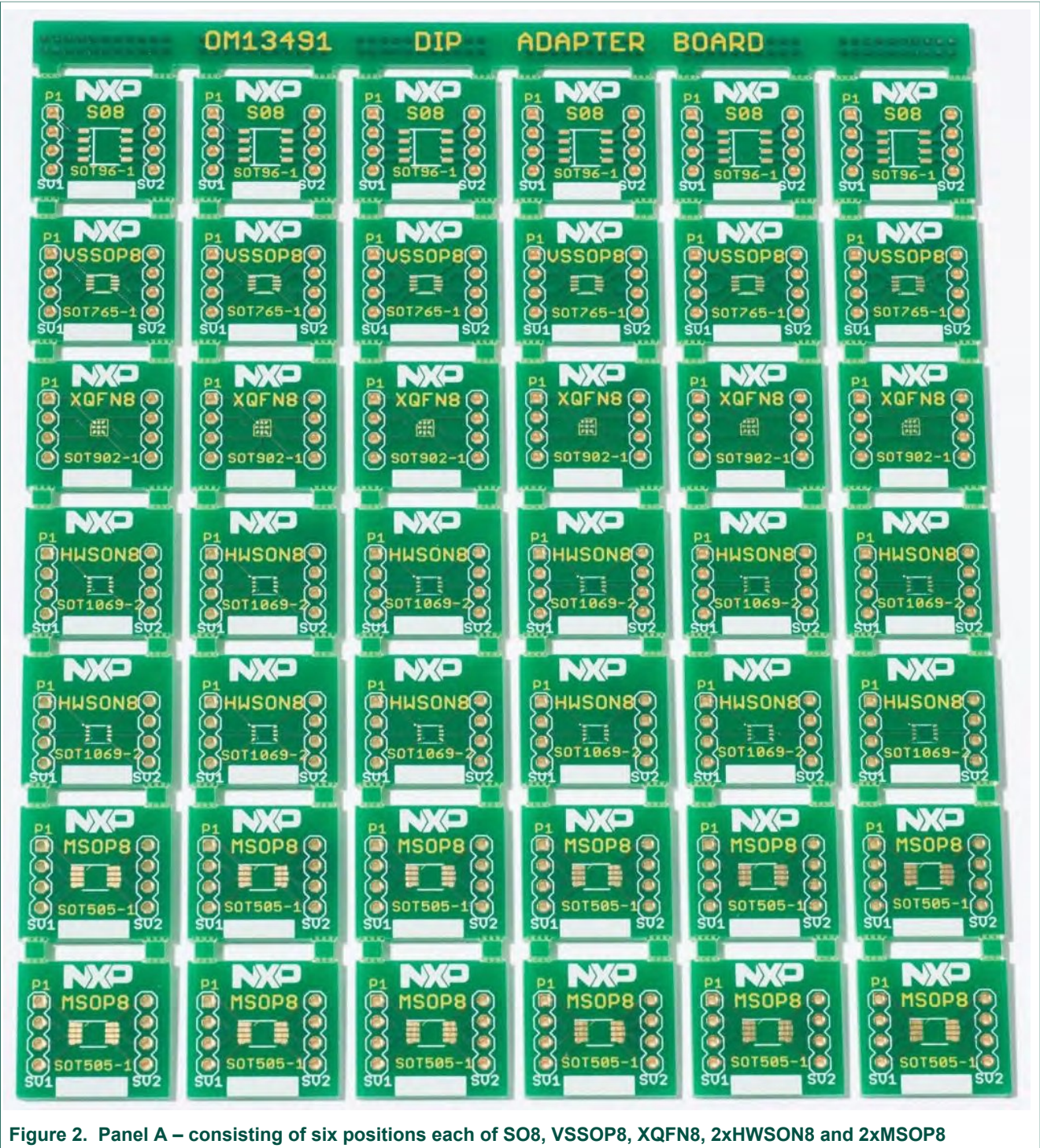


Figure 1. Breakout board with headers assembly



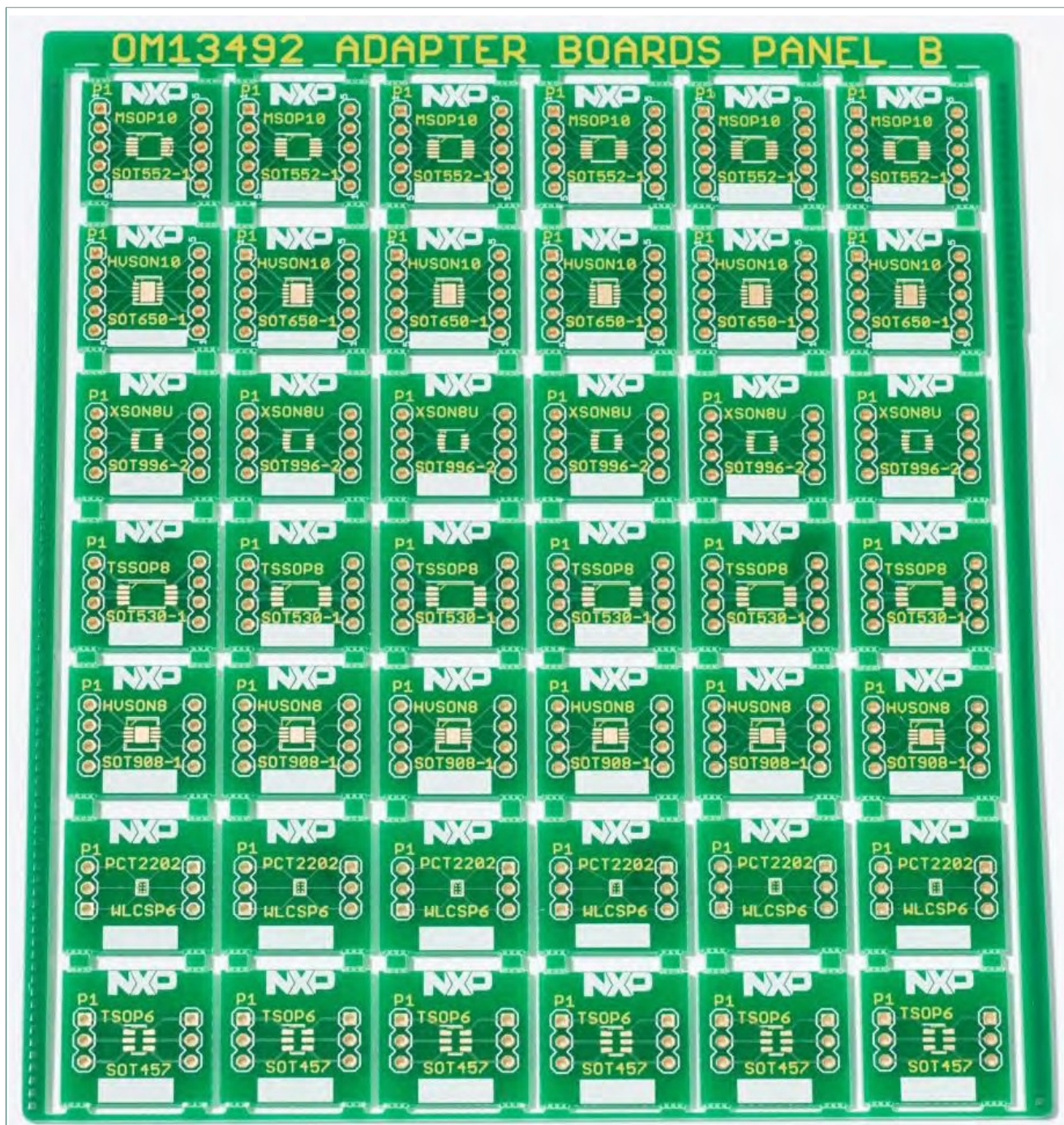


Figure 3. Panel B – consisting of six positions each of MSOP10, HUSON10, XSON8U, TSSOP8, HUSON8, PCT2202 / WLCSP6 and TSOP6

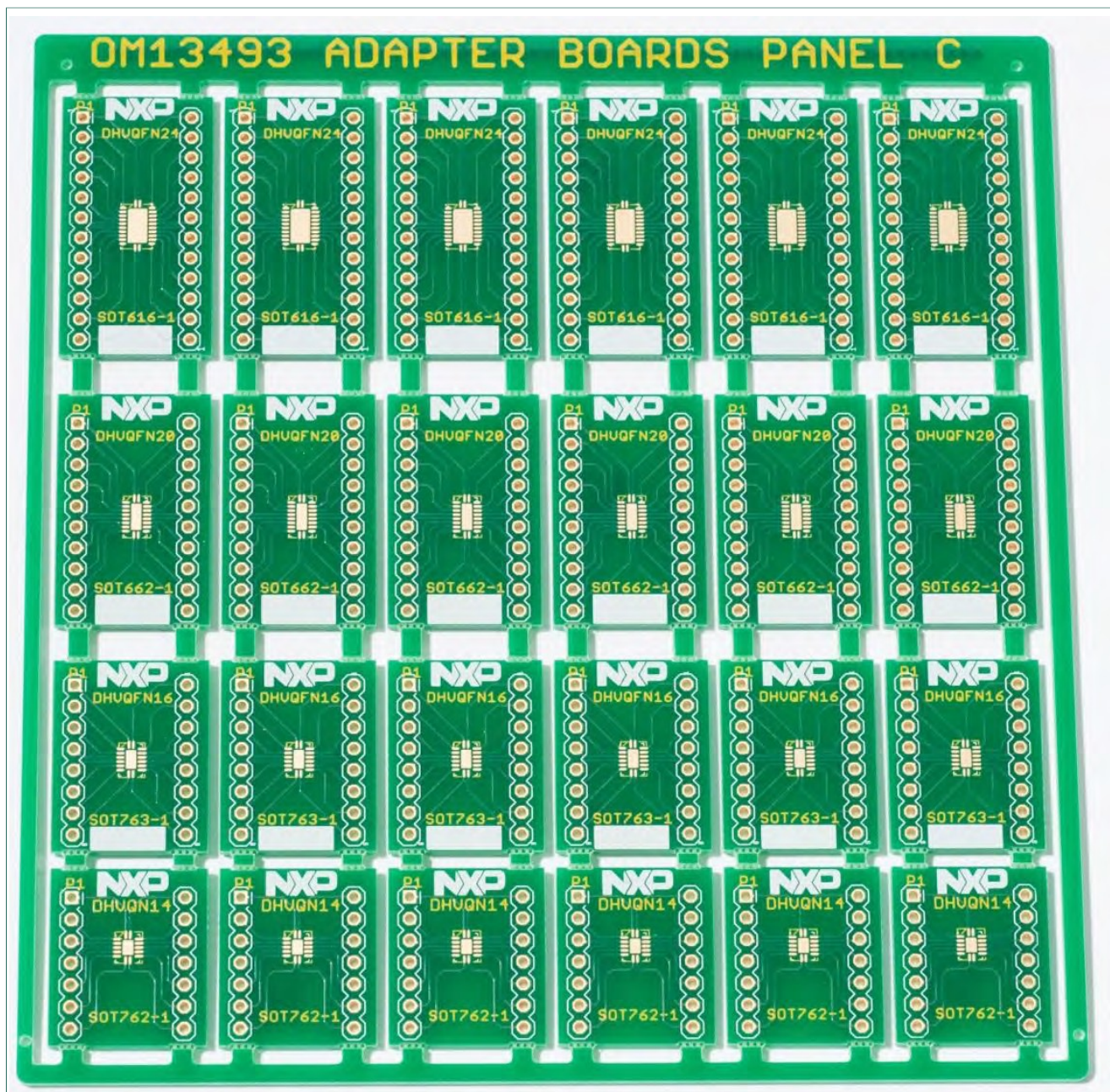


Figure 4. Panel C – consisting of six each of DHVQFN24, DHVQFN20, DHVQFN16, DHVQFN14

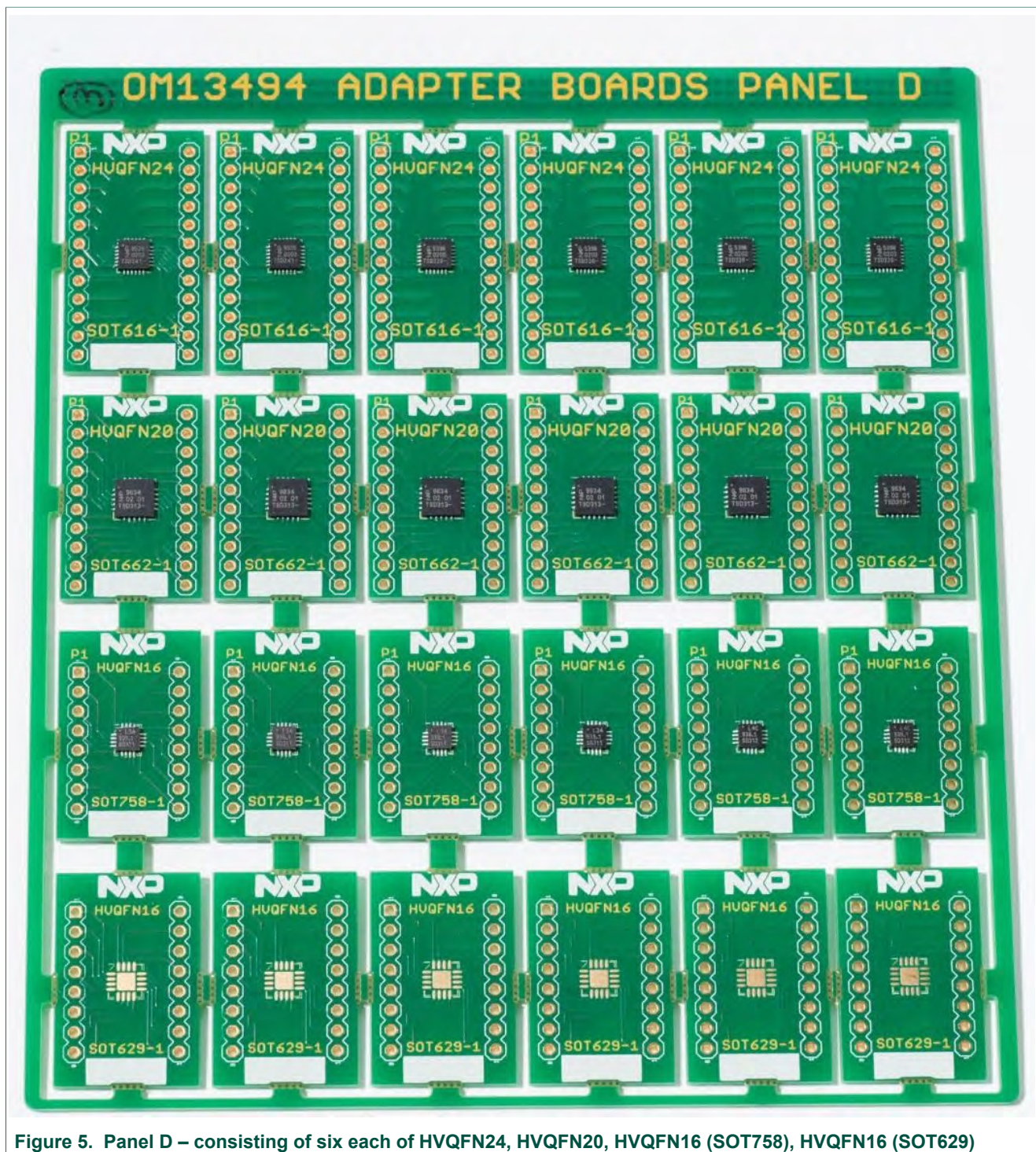


Figure 5. Panel D – consisting of six each of HVQFN24, HVQFN20, HVQFN16 (SOT758), HVQFN16 (SOT629)

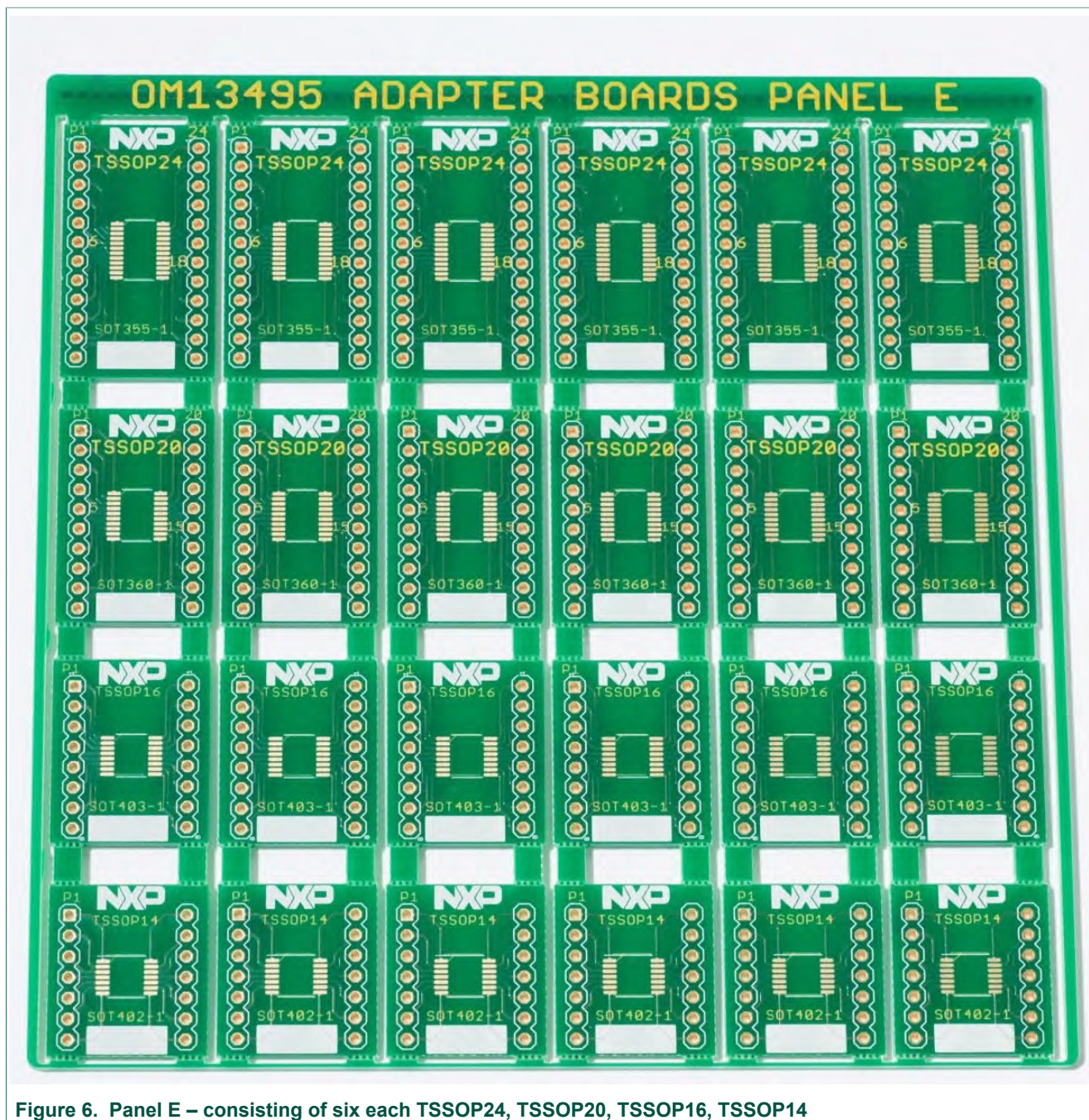


Figure 6. Panel E – consisting of six each TSSOP24, TSSOP20, TSSOP16, TSSOP14

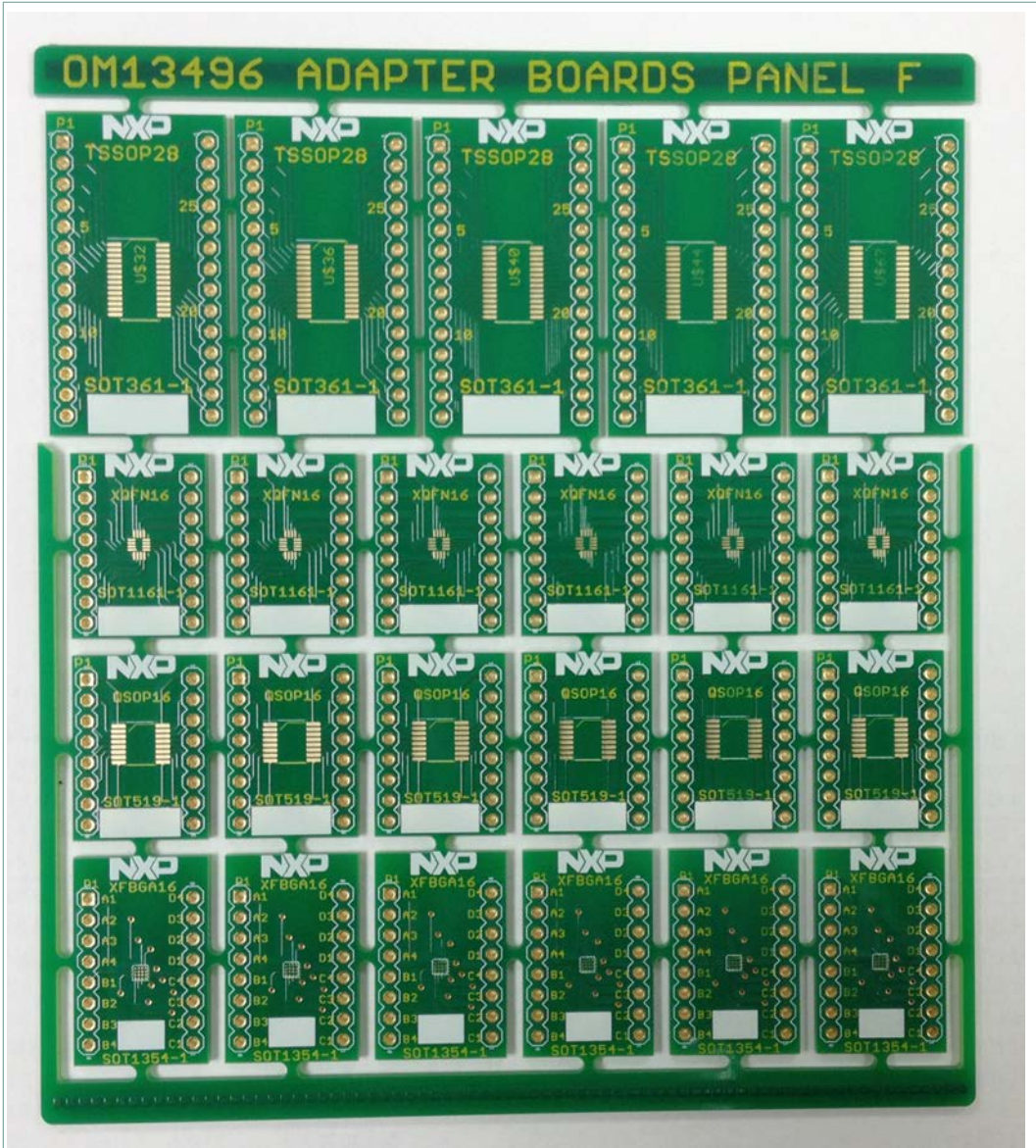


Figure 7. Panel F – consisting of five TSSOP28 and six positions each of XQFN16, QSOP16 and XFBGA16

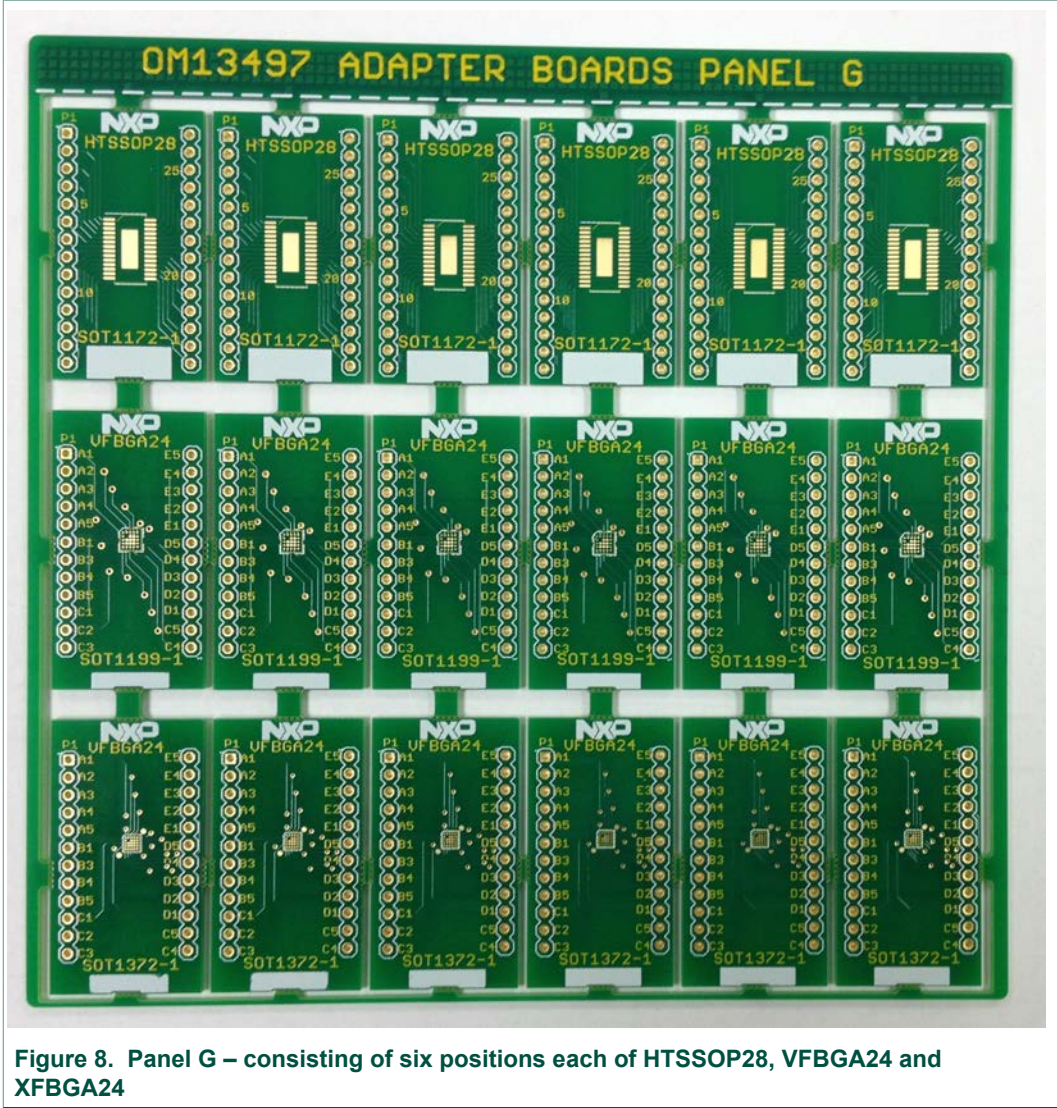


Figure 8. Panel G – consisting of six positions each of HTSSOP28, VFBGA24 and XFBGA24

4 Package listing – which panel contains a specific package

Table 2. Panel Number by Package SOT Number

Package SOT Number	Package Name	Panel
PCT2202UK	WLCSP6	Panel B - OM13492
SOT1069-2	HWSON8	Panel A - OM13491
SOT1161-1	XQFN16	Panel F - OM13496
SOT1172-1	HTSSOP28	Panel G - OM13497
SOT1199-1	VFBGA24	Panel G - OM13497
SOT1342-1	XFBGA24	Panel G - OM13497 ^[1]
SOT1353-1, SOT457	TSOP6	Panel B - OM13492
SOT1354-1	XFBGA16	Panel F - OM13496
SOT355-1	TSSOP24	Panel E - OM13495
SOT360-1	TSSOP20	Panel E - OM13495
SOT361-1	TSSOP28	Panel F - OM13496
SOT402-1	TSSOP14	Panel E - OM13495
SOT403-1	TSSOP16	Panel E - OM13495
SOT505-1	MSOP8	Panel A - OM13491
SOT519-1	QSOP16	Panel F - OM13496
SOT530-1	TSSOP8	Panel B - OM13492
SOT552-1	MSOP10	Panel B - OM13492
SOT815-1 ^[2]	DHVQFN24	Panel C - OM13493
SOT616-1	HVQFN24	Panel D - OM13494
SOT629-1	HVQFN14	Panel D - OM13494
SOT650-1	HVSON10	Panel B - OM13492
SOT764-1	DHVQFN20	Panel C - OM13493
SOT662-1 ^[3]	HVQFN20	Panel D - OM13494
SOT758-1	HVQFN16	Panel D - OM13494
SOT762-1	DHVQFN14	Panel C - OM13493
SOT763-1	DHVQFN16	Panel C - OM13493
SOT765-1	VSSOP8	Panel A - OM13491
SOT902-1	XQFN8	Panel A - OM13491
SOT908-1	HVSON8	Panel B - OM13492
SOT96-1	SO8	Panel A - OM13491
SOT996-2	XSON8U	Panel B - OM13492

[1] Silk Screen error on 3rd row of panel G, it should be XFBGA24, SOT1342-1

[2] Panel C row 1 silk screen error, it should be SOT815-1

[3] Silk screen error on panel C row 2, it should be SOT764-1

5 Panel contents – what each panel contains

Table 3. Panel Contents

Panel Description	Package Name	Package SOT Number
Panel A - OM13491		
	SO8	SOT96-1
	VSSOP8	SOT765-1
	XQFN8	SOT902-1
	HWSO8 x 2	SOT1069-2
	MSOP8 x 2	SOT505-1
Panel B - OM13492		
	MSOP10	SOT552-1
	HVSON10	SOT650-1
	XSON8U	SOT996-2
	TSSOP8	SOT530-1
	HVSON8	SOT908-1
	WLCSP6	PCT2202UK
	TSOP6	SOT1353-1, SOT457
Panel C - OM13493		
	DHVQFN24	SOT815-1
	DHVQFN20	SOT764-1
	DHVQFN16	SOT763-1
	DHVQFN14	SOT762-1
Panel D - OM13494		
	HVQFN24	SOT616-1
	HVQFN20	SOT662-1
	HVQFN16	SOT758-1
	HVQFN16	SOT629-1
Panel E - OM13495		
	TSSOP24	SOT355-1
	TSSOP20	SOT360-1
	TSSOP16	SOT403-1
	TSSOP14	SOT402-1
Panel F - OM13496		
	TSSOP28	SOT361-1
	XQFN16	SOT1161-1
	QSOP16	SOT519-1
	XFBGA16	SOT1354-1

Panel Description	Package Name	Package SOT Number
Panel G - OM13497		
	HTSSOP28	SOT1172-1
	VFBGA24	SOT1199-1
	XFBGA24	SOT1342-1

6 Part number listing with panel support

As a convenience, below is a listing of most of the I²C-bus devices offered by NXP. Instead of consulting the datasheet for the package name and package SOT number, simply look up the alpha-numeric part number listing and note the appropriate Panel Number.

NOTE: Pay close attention to the suffix which denotes the package type when looking up the part number

Table 4. Part number with corresponding panel number support

Panel Number	Panel Number	Package Name	Package SOT Number
GTL2002D	Panel A - OM13491	SO8	SOT96-1
GTL2002DC	Panel A - OM13491	VSSOP8	SOT765-1
GTL2002DP	Panel A - OM13491	TSSOP8	SOT505-1
GTL2002GM	Panel A - OM13491	XQFN8	SOT902-1
GTL2003BQ	Panel C - OM13493	DHVQFN20	SOT764-1
GTL2003PW	Panel E - OM13495	TSSOP20	SOT360-1
GTL2005PW	Panel E - OM13495	TSSOP14	SOT402-1
GTL2006PW	Panel F - OM13496	TSSOP28	SOT361-1
GTL2007PW	Panel F - OM13496	TSSOP28	SOT361-1
GTL2008PW	Panel F - OM13496	TSSOP28	SOT361-1
GTL2010BS	Panel C - OM13493	HVQFN24	SOT616-1
GTL2010PW	Panel E - OM13495	TSSOP24	SOT355-1
GTL2012DP	Panel A - OM13491	TSSOP8	SOT505-1
GTL2014PW	Panel E - OM13495	TSSOP14	SOT402-1
GTL2018PW	Panel E - OM13495	TSSOP24	SOT355-1
GTL2034PW	Panel E - OM13495	TSSOP14	SOT402-1
GTL2107PW	Panel F - OM13496	TSSOP28	SOT361-1
LM75AD	Panel A - OM13491	SO8	SOT96-1
LM75ADP	Panel A - OM13491	TSSOP8	SOT505-1
LM75BD	Panel A - OM13491	SO8	SOT96-1
LM75BDP	Panel A - OM13491	TSSOP8	SOT505-1
LM75BGD	Panel B - OM13492	XSON8	SOT996-2
LM75BTP	Panel A - OM13491	HWSOP8	SOT1069-2
NE1617ADS	Panel F - OM13496	SSOP16	SOT519-1
NVT2002D	Panel A - OM13491	SO8	SOT96-1
NVT2002DP	Panel A - OM13491	TSSOP8	SOT505-1
NVT2002GD	Panel B - OM13492	XSON8	SOT996-2
NVT2003DP	Panel B - OM13492	TSSOP10	SOT552-1
NVT2006BQ	Panel C - OM13493	DHVQFN16	SOT763-1

Panel Number	Panel Number	Package Name	Package SOT Number
NVT2006BS	Panel D - OM13494	HVQFN16	SOT758-1
NVT2006PW	Panel E - OM13495	TSSOP16	SOT403-1
NVT2008BQ	Panel C - OM13493	DHVQFN20	SOT764-1
NVT2008PW	Panel E - OM13495	TSSOP20	SOT360-1
NVT2010BQ	Panel C - OM13493	DHVQFN24	SOT815-1
NVT2010BS	Panel C - OM13493	HVQFN24	SOT616-1
NVT2010PW	Panel E - OM13495	TSSOP24	SOT355-1
NVT4555BS	Panel D - OM13494	HVQFN16	SOT758-1
P82B715TD	Panel A - OM13491	SO8	SOT96-1
P82B96DP	Panel A - OM13491	TSSOP8	SOT505-1
P82B96TD	Panel A - OM13491	SO8	SOT96-1
PCA24S08AD	Panel A - OM13491	SO8	SOT96-1
PCA24S08ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA6408ABS	Panel D - OM13494	HVQFN16	SOT758-1
PCA6408AHK	Panel A - OM13491	XQFN16	SOT1161-1
PCA6408APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA6416AEV	#N/A	VFBGA24	SOT1199-1
PCA6416AHF	#N/A	HWQFN24	SOT994-1
PCA6416APW	Panel E - OM13495	TSSOP24	SOT355-1
PCA8550DB	#N/A	SSOP16	SOT338-1
PCA8550PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA8574AD	#N/A	SO16	SOT162-1
PCA8574APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA8574ATS	#N/A	SSOP20	SOT266-1
PCA8574D	#N/A	SO16	SOT162-1
PCA8574PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA8574TS	#N/A	SSOP20	SOT266-1
PCA8575BQ	Panel C - OM13493	DHVQFN24	SOT815-1
PCA8575BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA8575D	#N/A	SO24	SOT137-1
PCA8575DB	#N/A	SSOP24	SOT340-1
PCA8575PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9306D	Panel A - OM13491	SO8	SOT96-1
PCA9306DC	Panel A - OM13491	VSSOP8	SOT765-1
PCA9306DC1	Panel A - OM13491	VSSOP8	SOT765-1
PCA9306DP	Panel A - OM13491	TSSOP8	SOT505-1

OM13491, OM13492, OM13493, OM13494, OM13495, OM13496, OM13497 Breakout Board

Panel Number	Panel Number	Package Name	Package SOT Number
PCA9306DP1	Panel A - OM13491	TSSOP8	SOT505-1
PCA9306GD1	Panel B - OM13492	XSON8	SOT996-2
PCA9306GM	Panel A - OM13491	XQFN8	SOT902-1
PCA9406DC	Panel A - OM13491	VSSOP8	SOT765-1
PCA9406DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9500BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9500D	#N/A	SO16	SOT162-1
PCA9500PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9501BS	Panel C - OM13493	HVQFN20	SOT662-1
PCA9501D	#N/A	SO20	SOT163-1
PCA9501PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9507D	Panel A - OM13491	SO8	SOT96-1
PCA9507DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9508D	Panel A - OM13491	SO8	SOT96-1
PCA9508DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9509ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9509AGM	Panel A - OM13491	XQFN8	SOT902-1
PCA9509D	Panel A - OM13491	SO8	SOT96-1
PCA9509DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9509GM	Panel A - OM13491	XQFN8	SOT902-1
PCA9509PDP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9509PGM	Panel A - OM13491	XQFN8	SOT902-1
PCA9510AD	Panel A - OM13491	SO8	SOT96-1
PCA9510ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9511AD	Panel A - OM13491	SO8	SOT96-1
PCA9511ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9512AD	Panel A - OM13491	SO8	SOT96-1
PCA9512ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9512BD	Panel A - OM13491	SO8	SOT96-1
PCA9512BDP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9513AD	Panel A - OM13491	SO8	SOT96-1
PCA9513ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9514AD	Panel A - OM13491	SO8	SOT96-1
PCA9514ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9515AD	Panel A - OM13491	SO8	SOT96-1
PCA9515ADP	Panel A - OM13491	TSSOP8	SOT505-1

OM13491, OM13492, OM13493, OM13494, OM13495, OM13496, OM13497 Breakout Board

Panel Number	Panel Number	Package Name	Package SOT Number
PCA9515ATP	Panel A - OM13491	HWSON8	SOT1069-2
PCA9515D	Panel A - OM13491	SO8	SOT96-1
PCA9515DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9516APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9517AD	Panel A - OM13491	SO8	SOT96-1
PCA9517ADP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9517ATP	Panel A - OM13491	HWSON8	SOT1069-2
PCA9517D	Panel A - OM13491	SO8	SOT96-1
PCA9517DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9518AD	#N/A	SO20	SOT163-1
PCA9518APW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9518PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9519BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9519PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9521D	Panel A - OM13491	SO8	SOT96-1
PCA9521DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9522D	Panel A - OM13491	SO8	SOT96-1
PCA9522DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9525D	Panel A - OM13491	SO8	SOT96-1
PCA9525DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9527DP	Panel B - OM13492	TSSOP10	SOT552-1
PCA9530D	Panel A - OM13491	SO8	SOT96-1
PCA9530DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9531BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9531PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9532BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9532D	#N/A	SO24	SOT137-1
PCA9532PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9533D	Panel A - OM13491	SO8	SOT96-1
PCA9533DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9534BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9534BS3	Panel D - OM13494	HVQFN16	SOT758-1
PCA9534D	#N/A	SO16	SOT162-1
PCA9534PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9535AHF	#N/A	HWQFN24	SOT994-1
PCA9535APW	Panel E - OM13495	TSSOP24	SOT355-1

Panel Number	Panel Number	Package Name	Package SOT Number
PCA9535BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9535CD	#N/A	SO24	SOT137-1
PCA9535CHF	#N/A	HWQFN24	SOT994-1
PCA9535CPW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9535D	#N/A	SO24	SOT137-1
PCA9535HF	#N/A	HWQFN24	SOT994-1
PCA9535PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9536D	Panel A - OM13491	SO8	SOT96-1
PCA9536DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9536TK	Panel B - OM13492	HVSON8	SOT908-1
PCA9537DP	Panel B - OM13492	TSSOP10	SOT552-1
PCA9538ABS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9538APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9538BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9538D	#N/A	SO16	SOT162-1
PCA9538PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9539AHF	#N/A	HWQFN24	SOT994-1
PCA9539APW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9539BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9539D	#N/A	SO24	SOT137-1
PCA9539PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9539RBS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9539RPW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9540BD	Panel A - OM13491	SO8	SOT96-1
PCA9540BDP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9540BGD	Panel B - OM13492	XSON8	SOT996-2
PCA9541ABS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9541APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9541BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9541PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9542APW	Panel E - OM13495	TSSOP14	SOT402-1
PCA9543APW	Panel E - OM13495	TSSOP14	SOT402-1
PCA9543BPW	Panel E - OM13495	TSSOP14	SOT402-1
PCA9544ABS	Panel C - OM13493	HVQFN20	SOT662-1
PCA9544AD	#N/A	SO20	SOT163-1
PCA9544APW	Panel E - OM13495	TSSOP20	SOT360-1

Panel Number	Panel Number	Package Name	Package SOT Number
PCA9545ABS	Panel C - OM13493	HVQFN20	SOT662-1
PCA9545AD	#N/A	SO20	SOT163-1
PCA9545APW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9545BPW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9545CPW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9546ABS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9546APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9547BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9547D	#N/A	SO24	SOT137-1
PCA9547PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9548ABS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9548AD	#N/A	SO24	SOT137-1
PCA9548APW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9550D	Panel A - OM13491	SO8	SOT96-1
PCA9550DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9551BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9551PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9552BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9552D	#N/A	SO24	SOT137-1
PCA9552PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9553D	Panel A - OM13491	SO8	SOT96-1
PCA9553DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9553TK	Panel B - OM13492	HVSON8	SOT908-1
PCA9554ABS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9554ABS3	Panel D - OM13494	HVQFN16	SOT758-1
PCA9554AD	#N/A	SO16	SOT162-1
PCA9554ADB	#N/A	SSOP16	SOT338-1
PCA9554APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9554ATS	#N/A	SSOP20	SOT266-1
PCA9554BBS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9554BPW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9554BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9554BS3	Panel D - OM13494	HVQFN16	SOT758-1
PCA9554CBS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9554CPW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9554D	#N/A	SO16	SOT162-1

Panel Number	Panel Number	Package Name	Package SOT Number
PCA9554DB	#N/A	SSOP16	SOT338-1
PCA9554PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9554TS	#N/A	SSOP20	SOT266-1
PCA9555AHF	#N/A	HWQFN24	SOT994-1
PCA9555APW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9555BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9555D	#N/A	SO24	SOT137-1
PCA9555DB	#N/A	SSOP24	SOT340-1
PCA9555HF	#N/A	HWQFN24	SOT994-1
PCA9555PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9556PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9557BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9557PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9558PW	Panel F - OM13496	TSSOP28	SOT361-1
PCA9559PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9560PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9561PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9564BS	Panel C - OM13493	HVQFN20	SOT662-1
PCA9564D	#N/A	SO20	SOT163-1
PCA9564PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9570GM	Panel A - OM13491	XQFN8	SOT902-1
PCA9574BS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9574HK	Panel A - OM13491	XQFN16	SOT1161-1
PCA9574PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9575HF	#N/A	HWQFN24	SOT994-1
PCA9575PW1	Panel E - OM13495	TSSOP24	SOT355-1
PCA9575PW2	Panel F - OM13496	TSSOP28	SOT361-1
PCA9600D	Panel A - OM13491	SO8	SOT96-1
PCA9600DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9601D	Panel A - OM13491	SO8	SOT96-1
PCA9601DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9605D	Panel A - OM13491	SO8	SOT96-1
PCA9605DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9614DP	Panel B - OM13492	TSSOP10	SOT552-1
PCA9616PW	Panel E - OM13495	TSSOP14	SOT402-1
PCA9617ADP	Panel A - OM13491	TSSOP8	SOT505-1

OM13491, OM13492, OM13493, OM13494, OM13495, OM13496, OM13497 Breakout Board

Panel Number	Panel Number	Package Name	Package SOT Number
PCA9617ATP	Panel A - OM13491	HWSON8	SOT1069-2
PCA9617DP	Panel A - OM13491	TSSOP8	SOT505-1
PCA9617TP	Panel A - OM13491	HWSON8	SOT1069-2
PCA9621PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9624BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9624PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9629APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9629PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9632DP1	Panel A - OM13491	TSSOP8	SOT505-1
PCA9632DP2	Panel B - OM13492	TSSOP10	SOT552-1
PCA9632TK	Panel B - OM13492	HVSON8	SOT908-1
PCA9632TK2	Panel B - OM13492	HVSON10	SOT650-1
PCA9633BS	Panel D - OM13494	HVQFN16	SOT629-1
PCA9633DP1	Panel A - OM13491	TSSOP8	SOT505-1
PCA9633DP2	Panel B - OM13492	TSSOP10	SOT552-1
PCA9633PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9633TK	Panel B - OM13492	HVSON8	SOT908-1
PCA9634BS	Panel C - OM13493	HVQFN20	SOT662-1
PCA9634D	#N/A	SO20	SOT163-1
PCA9634PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9635PW	Panel F - OM13496	TSSOP28	SOT361-1
PCA9646PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9665APW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9665BS	Panel C - OM13493	HVQFN20	SOT662-1
PCA9665D	#N/A	SO20	SOT163-1
PCA9665PW	Panel E - OM13495	TSSOP20	SOT360-1
PCA9670BS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9670D	#N/A	SO16	SOT162-1
PCA9670PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9671BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9671D	#N/A	SO24	SOT137-1
PCA9671PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9672BS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9672D	#N/A	SO16	SOT162-1
PCA9672PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9673BS	Panel C - OM13493	HVQFN24	SOT616-1

Panel Number	Panel Number	Package Name	Package SOT Number
PCA9673D	#N/A	SO24	SOT137-1
PCA9673PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9674ABS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9674AD	#N/A	SO16	SOT162-1
PCA9674APW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9674BS	Panel D - OM13494	HVQFN16	SOT758-1
PCA9674D	#N/A	SO16	SOT162-1
PCA9674PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9675BS	Panel C - OM13493	HVQFN24	SOT616-1
PCA9675D	#N/A	SO24	SOT137-1
PCA9675PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9685PW	Panel F - OM13496	TSSOP28	SOT361-1
PCA9701D	#N/A	SO24	SOT137-1
PCA9701PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9702PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9703PW	Panel E - OM13495	TSSOP24	SOT355-1
PCA9922PW	Panel E - OM13495	TSSOP16	SOT403-1
PCA9952TW	#N/A	HTSSOP28	SOT1172-2 ^[1]
PCA9955TW	#N/A	HTSSOP28	SOT1172-2 ^[1]
PCA9955BTW	#N/A	HTSSOP28	SOT1172-3 ^[1]
PCAL6408ABS	Panel D - OM13494	HVQFN16	SOT758-1
PCAL6408AHK	Panel A - OM13491	XQFN16	SOT1161-1
PCAL6408APW	Panel E - OM13495	TSSOP16	SOT403-1
PCAL6416AEV	#N/A	VFBGA24	SOT1199-1
PCAL6416AEX	#N/A	XFBGA24	SOT1342-1
PCAL6416AEX1	#N/A	X2QFN24	SOT1895-1
PCAL6416AER	#N/A	UFBGA24	SOT1361-1
PCAL6416AHF	#N/A	HWQFN24	SOT994-1
PCAL6416APW	Panel E - OM13495	TSSOP24	SOT355-1
PCAL9535AHF	#N/A	HWQFN24	SOT994-1
PCAL9535APW	Panel E - OM13495	TSSOP24	SOT355-1
PCAL9538ABS	Panel D - OM13494	HVQFN16	SOT758-1
PCAL9538APW	Panel E - OM13495	TSSOP16	SOT403-1
PCAL9539AHF	#N/A	HWQFN24	SOT994-1
PCAL9539APW	Panel E - OM13495	TSSOP24	SOT355-1
PCAL9554BBS	Panel D - OM13494	HVQFN16	SOT758-1

Panel Number	Panel Number	Package Name	Package SOT Number
PCAL9554BPW	Panel E - OM13495	TSSOP16	SOT403-1
PCAL9554CBS	Panel D - OM13494	HVQFN16	SOT758-1
PCAL9554CPW	Panel E - OM13495	TSSOP16	SOT403-1
PCAL9555AHF	#N/A	HWQFN24	SOT994-1
PCAL9555APW	Panel E - OM13495	TSSOP24	SOT355-1
PCF85102C-2T	Panel A - OM13491	SO8	SOT96-1
PCF85103C-2T	Panel A - OM13491	SO8	SOT96-1
PCF8570T	#N/A	SO8	SOT176-1
PCF8574AT	#N/A	SO16	SOT162-1
PCF8574ATS	#N/A	SSOP20	SOT266-1
PCF8574T	#N/A	SO16	SOT162-1
PCF8574TS	#N/A	SSOP20	SOT266-1
PCF8575CTS	#N/A	SSOP24	SOT340-1
PCF8575TS	#N/A	SSOP24	SOT340-1
PCF8582C-2T	Panel A - OM13491	SO8	SOT96-1
PCF8584T	#N/A	SO20	SOT163-1
PCF8594C-2T	Panel A - OM13491	SO8	SOT96-1
PCF8598C-2T	#N/A	SO8	SOT176-1
PCT1075D	Panel A - OM13491	SO8	SOT96-1
PCT1075DP	Panel A - OM13491	TSSOP8	SOT505-1
PCT1075TP	Panel A - OM13491	HWSON8	SOT1069-2
PCT2075D	Panel A - OM13491	SO8	SOT96-1
PCT2075DP	Panel A - OM13491	TSSOP8	SOT505-1
PCT2075GV	Panel B - OM13492	TSOP6	SOT1353-1
PCT2075TP	Panel A - OM13491	HWSON8	SOT1069-2
PCU9654PW	Panel E - OM13495	TSSOP24	SOT355-1
PCU9655PW	Panel F - OM13496	TSSOP28	SOT361-1
PCU9655PW1	Panel F - OM13496	TSSOP28	SOT361-1
SA56004AD	Panel A - OM13491	SO8	SOT96-1
SA56004ADP	Panel A - OM13491	TSSOP8	SOT505-1
SA56004ATK	Panel A - OM13491	HVSON8	SOT782-1
SA56004BD	Panel A - OM13491	SO8	SOT96-1
SA56004BDP	Panel A - OM13491	TSSOP8	SOT505-1
SA56004CD	Panel A - OM13491	SO8	SOT96-1
SA56004CDP	Panel A - OM13491	TSSOP8	SOT505-1
SA56004DD	Panel A - OM13491	SO8	SOT96-1

OM13491, OM13492, OM13493, OM13494, OM13495, OM13496, OM13497 Breakout Board

Panel Number	Panel Number	Package Name	Package SOT Number
SA56004DDP	Panel A - OM13491	TSSOP8	SOT505-1
SA56004ED	Panel A - OM13491	SO8	SOT96-1
SA56004EDP	Panel A - OM13491	TSSOP8	SOT505-1
SA56004ETK	Panel A - OM13491	HVSON8	SOT782-1
SA56004FD	Panel A - OM13491	SO8	SOT96-1
SA56004FDP	Panel A - OM13491	TSSOP8	SOT505-1
SA56004FTK	Panel A - OM13491	HVSON8	SOT782-1
SA56004GD	Panel A - OM13491	SO8	SOT96-1
SA56004GDP	Panel A - OM13491	TSSOP8	SOT505-1
SA56004HD	Panel A - OM13491	SO8	SOT96-1
SA56004HDP	Panel A - OM13491	TSSOP8	SOT505-1
SA601DK	#N/A	SSOP20	SOT266-1
SA602AD	Panel A - OM13491	SO8	SOT96-1
SA605D	#N/A	SO20	SOT163-1
SA605DK	#N/A	SSOP20	SOT266-1
SA606D	#N/A	SO20	SOT163-1
SA606DK	#N/A	SSOP20	SOT266-1
SA607DK	#N/A	SSOP20	SOT266-1
SA608DK	#N/A	SSOP20	SOT266-1
SA612AD	Panel A - OM13491	SO8	SOT96-1
SA615D	#N/A	SO20	SOT163-1
SA615DK	#N/A	SSOP20	SOT266-1
SA616BS	Panel D - OM13494	HVQFN20	SOT917-1
SA616DK	#N/A	SSOP20	SOT266-1
SA630D	Panel A - OM13491	SO8	SOT96-1
SA636BS	Panel D - OM13494	HVQFN20	SOT917-1
SA636DK	#N/A	SSOP20	SOT266-1
SA639DH	Panel E - OM13495	TSSOP24	SOT355-1
SE95D	Panel A - OM13491	SO8	SOT96-1
SE95DP	Panel A - OM13491	TSSOP8	SOT505-1
SE97BPW	Panel B - OM13492	TSSOP8	SOT530-1
SE97BTP	Panel A - OM13491	HWSON8	SOT1069-2
SE98APW	Panel B - OM13492	TSSOP8	SOT530-1
SE98ATP	Panel A - OM13491	HWSON8	SOT1069-2
TDA5051AT	#N/A	SO16	SOT162-1

[1] None of the panels support SOT1172-2 footprint, nor SOT1172-3. Devices with these two footprints can use Panel G SOT1172-1 footprint only if center pad is not soldered on.

7 Legal information

7.1 Definitions

Draft — The document is a draft version only. The content is still under internal review and subject to formal approval, which may result in modifications or additions. NXP Semiconductors does not give any representations or warranties as to the accuracy or completeness of information included herein and shall have no liability for the consequences of use of such information.

7.2 Disclaimers

Limited warranty and liability — Information in this document is believed to be accurate and reliable. However, NXP Semiconductors does not give any representations or warranties, expressed or implied, as to the accuracy or completeness of such information and shall have no liability for the consequences of use of such information. NXP Semiconductors takes no responsibility for the content in this document if provided by an information source outside of NXP Semiconductors. In no event shall NXP Semiconductors be liable for any indirect, incidental, punitive, special or consequential damages (including - without limitation - lost profits, lost savings, business interruption, costs related to the removal or replacement of any products or rework charges) whether or not such damages are based on tort (including negligence), warranty, breach of contract or any other legal theory. Notwithstanding any damages that customer might incur for any reason whatsoever, NXP Semiconductors' aggregate and cumulative liability towards customer for the products described herein shall be limited in accordance with the Terms and conditions of commercial sale of NXP Semiconductors.

Right to make changes — NXP Semiconductors reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.

Suitability for use — NXP Semiconductors products are not designed, authorized or warranted to be suitable for use in life support, life-critical or safety-critical systems or equipment, nor in applications where failure or malfunction of an NXP Semiconductors product can reasonably be expected to result in personal injury, death or severe property or environmental damage. NXP Semiconductors and its suppliers accept no liability for inclusion and/or use of NXP Semiconductors products in such equipment or applications and therefore such inclusion and/or use is at the customer's own risk.

Applications — Applications that are described herein for any of these products are for illustrative purposes only. NXP Semiconductors makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification. Customers are responsible for the design and operation of their applications and products using NXP Semiconductors products, and NXP Semiconductors accepts no liability for any assistance with applications or customer product

design. It is customer's sole responsibility to determine whether the NXP Semiconductors product is suitable and fit for the customer's applications and products planned, as well as for the planned application and use of customer's third party customer(s). Customers should provide appropriate design and operating safeguards to minimize the risks associated with their applications and products. NXP Semiconductors does not accept any liability related to any default, damage, costs or problem which is based on any weakness or default in the customer's applications or products, or the application or use by customer's third party customer(s). Customer is responsible for doing all necessary testing for the customer's applications and products using NXP Semiconductors products in order to avoid a default of the applications and the products or of the application or use by customer's third party customer(s). NXP does not accept any liability in this respect.

Export control — This document as well as the item(s) described herein may be subject to export control regulations. Export might require a prior authorization from competent authorities.

Evaluation products — This product is provided on an "as is" and "with all faults" basis for evaluation purposes only. NXP Semiconductors, its affiliates and their suppliers expressly disclaim all warranties, whether express, implied or statutory, including but not limited to the implied warranties of non-infringement, merchantability and fitness for a particular purpose. The entire risk as to the quality, or arising out of the use or performance, of this product remains with customer. In no event shall NXP Semiconductors, its affiliates or their suppliers be liable to customer for any special, indirect, consequential, punitive or incidental damages (including without limitation damages for loss of business, business interruption, loss of use, loss of data or information, and the like) arising out of the use of or inability to use the product, whether or not based on tort (including negligence), strict liability, breach of contract, breach of warranty or any other theory, even if advised of the possibility of such damages. Notwithstanding any damages that customer might incur for any reason whatsoever (including without limitation, all damages referenced above and all direct or general damages), the entire liability of NXP Semiconductors, its affiliates and their suppliers and customer's exclusive remedy for all of the foregoing shall be limited to actual damages incurred by customer based on reasonable reliance up to the greater of the amount actually paid by customer for the product or five dollars (US\$5.00). The foregoing limitations, exclusions and disclaimers shall apply to the maximum extent permitted by applicable law, even if any remedy fails of its essential purpose.

Translations — A non-English (translated) version of a document is for reference only. The English version shall prevail in case of any discrepancy between the translated and English versions.

7.3 Trademarks

Notice: All referenced brands, product names, service names and trademarks are the property of their respective owners.

i²C-bus — logo is a trademark of NXP B.V.

Tables

Tab. 1.	Package Name to SOT drawing number conversion	4	Tab. 3.	Panel Contents	16
Tab. 2.	Panel Number by Package SOT Number	15	Tab. 4.	Part number with corresponding panel number support	18

Figures

Fig. 1.	Breakout board with headers assembly	7	Fig. 5.	Panel D – consisting of six each of HVQFN24, HVQFN20, HVQFN16 (SOT758), HVQFN16 (SOT629)	11
Fig. 2.	Panel A – consisting of six positions each of SO8, VSSOP8, XQFN8, 2xHWSO8 and 2xMSOP8	8	Fig. 6.	Panel E – consisting of six each TSSOP24, TSSOP20, TSSOP16, TSSOP14	12
Fig. 3.	Panel B – consisting of six positions each of MSOP10, HCSO10, XSON8U, TSSOP8, HVSON8, PCT2202 / WLCSP6 and TSOP6	9	Fig. 7.	Panel F – consisting of five TSSOP28 and six positions each of XQFN16, QSOP16 and XFBGA16	13
Fig. 4.	Panel C – consisting of six each of DHVQFN24, DHVQFN20, DHVQFN16, DHVQFN14	10	Fig. 8.	Panel G – consisting of six positions each of HTSSOP28, VFBGA24 and XFBGA24	14

Contents

1 Introduction 3

2 Key features 4

3 Quick overview of the breakout board
concept7

4 Package listing – which panel contains a
specific package 15

5 Panel contents – what each panel contains16

6 Part number listing with panel support18

7 Legal information29

Please be aware that important notices concerning this document and the product(s) described herein, have been included in section 'Legal information'.